Amendments to the Claims

1. (Currently Amended) A method for modifying the function of a target receptor associated with a neurological disorder in a subject comprising:

~~inducing the presence of a~~ administering a vaccine comprising a therapeutically effective amount of an antigen in the circulatory system of the subject, wherein the antigen elicits the production of antibodies that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject and bind to a target receptor located on a neuronal cell in the central nervous system of the subject and associated with a neurological disorder, and modify the function of the target receptor.

2. (Previously Presented) The method of claim 1, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

3. (Previously Presented) The method of claim 1, wherein the neurological disorder is selected from the group consisting of epilepsy, stroke, Alzheimer's disease, Parkinson's disease, dementia, Huntington's disease, amyloid lateral sclerosis and depression.

4. (Withdrawn) The method of claim 1, wherein the neurological disorder is stoke.

5. (Previously Presented) The method of claim 1, wherein the neurological disorder is epilepsy.

6. (Currently Amended) The method of claim 1, wherein the vaccine comprises an antigen derived from a neuroreceptor. ~~present in the circulatory system of the subject is selected from the group consisting of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors, and cell surface molecules~~.

7. (Previously Presented) The method of claim 6, wherein the antigen is an N-methyl-D-aspartate (NMDA) receptor.

8. (Previously Presented) The method of claim 7, wherein the antigen is N-methyl-D-aspartate receptor subunit 1 (NMDARI).

9-12 (Canceled)

13. (Withdrawn) The method of claim 1, wherein the step of administering a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, further comprises administering an antibody, or an antibody portion elicited in a mammal for administration to the subject.

14. (Withdrawn) The method of claim 1, wherein the isolated antibody, or antibody portion is administered directly to the central nervous system.

15. (Withdrawn) The method of claim 1, wherein the isolated antibody, or an antibody portion is selected from the group consisting of a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a chimeric antibody, a humanized antibody, an Fab fragment, an F(ab')2 fragment and a single chain Fv fragment.

16. (Withdrawn) The method of claim 15, wherein the isolated antibody, or antibody portion is selected from the group consisting of an anti-NMDA antibody, an anti-GluR antibody, an anti-NK-1 antibody, an anti-dopamine transporter antibody and anti-glutamic acid decarboxylase antibody.

17. (Withdrawn) The method of claim 16, wherein the isolated antibody, or an antibody portion is an anti-NMDA antibody.

18. (Withdrawn) The method of claim 17, wherein the isolated antibody, or an antibody portion is an anti-NMDAR1 antibody.

19. (Withdrawn) The method of claim 16, wherein the isolated antibody, or antibody portion is an anti-GluR antibody.

20. (Withdrawn) The method of claim 19, wherein the isolated antibody is an anti-GluR4 antibody.

21. (Withdrawn) The method of claim 19, wherein the isolated antibody is an anti-GluR6 antibody.

22. (Currently Amended) A method for modifying the function of a target receptor associated with a neurological disorder in the central nervous system of a subject comprising:

administering a vaccine comprising ~~inducing the presence of~~ a therapeutically effective amount of an antigen in the circulatory system of the subject, wherein the antigen elicits the production of antibodies that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject and bind to the target receptor located on a neuronal cell in the central nervous system and associated with a neurological disorder, and directly modify the function of the target receptor, or indirectly modify the function of a process involving the target receptor.

23. (Previously Presented) The method of claim 22, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

24. (Currently amended) The method of claim 22, wherein the target receptor is a neuroreceptor. ~~is selected from the group consisting of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules~~.

25. (Currently Amended) The method of claim 22, wherein the vaccine comprises an antigen derived from a neuroreceptor. ~~present in the circulatory system of the subject is selected from the group consisting of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules~~.

26. (Canceled)

27. (Currently Amended) The method of claim ~~26~~ 25, wherein the antigen is an N-methyl-D-aspartate (NMDA) receptor.

28. (Previously Presented) The method of claim 27, wherein the antigen is N-methyl-D-aspartate receptor subunit 1 (NMDAR1).

29-32 (Canceled)

33. (Withdrawn) The method of claim 22, wherein the step of administering a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, further comprises administering an antibody, or an antibody portion elicited in a mammal for administration to the subject.

34. (Withdrawn) The method of claim 22, wherein the isolated antibody, or antibody portion is administered directly to the central nervous system.

35. (Withdrawn) The method of claim 22, wherein the isolated antibody, or an antibody portion is selected from the group consisting of a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a chimeric antibody, a humanized antibody, an Fab fragment, an F(ab')2 fragment and a single chain Fv fragment.

36. (Currently Amended) A method for modifying the function of a target receptor associated with cognition in the central nervous system of a subject comprising:

administering a vaccine comprising ~~inducing the presence of~~ a therapeutically effective amount of an antigen in the circulatory system of the subject, wherein the antigen elicits the production of antibodies that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject and bind to the target receptor associated with cognition, and modify the function of the target receptor such that the modification of the target receptor

improves cognition in the subject.

37. (Previously Presented) The method of claim 36, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

38. (Currently Amended) The method of claim 36, wherein the vaccine comprises an antigen derived from a neuroreceptor. ~~present in the circulatory system of the subject is selected from the group consisting of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules~~.

39. (Previously Presented) The method of claim 38, wherein the antigen is an N-methyl-D-aspartate (NMDA) receptor.

40. (Previously Presented) The method of claim 39, wherein the antigen is N-methyl-D-aspartate receptor subunit 1

41-46 (Canceled)

47. (Withdrawn) The method of claim 36, wherein the antibody binds to the NMDA receptor and upregulates NMDA receptor expression.

48. (Withdrawn) The method of claim 36, wherein the antibody binds to the NMDA receptor and decreases Krox-24 expression.

49. (Withdrawn) The method of claim 36, wherein the step of administering a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, further comprises administering an antibody, or an antibody portion elicited in a mammal for administration to the subject.

50. (Withdrawn) The method of claim 36, wherein the isolated antibody, or antigen binding portion is administered directly to the central nervous system.

51. (Withdrawn) The method of claim 36, wherein the isolated antibody, or an antibody portion is selected from the group consisting of a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a chimeric antibody, a humanized antibody, an Fab fragment, an F(ab')2 fragment and a single chain Fv fragment.

52. (Withdrawn) The method of claim 51, wherein the isolated antibody, or an antibody portion is an anti-NMDA antibody.

53. (Withdrawn) The method of claim 52, wherein the isolated antibody, or an antibody portion is an anti-NMDAR1 antibody.

54. (Currently Amended) A method for modifying the function of a target receptor associated with a neuroendocrine disorder in the central nervous system of a subject comprising:

administering a vaccine comprising ~~inducing the presence of~~ a therapeutically effective amount of an antigen in the circulatory system of the subject, wherein the antigen elicits the production of antibodies that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject, and bind to the target receptor located on a neuronal cell in the central nervous system of the subject and associated with a neuroendocrine disorder, and directly modify the function of the target receptor, or indirectly modify the function of a process involving the target receptor.

55. (Withdrawn) The method of claim 54, wherein the neuroendocrine disorder is obesity.

56. (Withdrawn) The method of claim 54, wherein the antigen is selected from the group consisting of neuropeptide-Y (NPY), galanin, cocaine-and amphetamine-regulated transcript (CART), orexin, thyrotropin - releasing hormone (TRH), leptan, corticotropin - releasing hormone (CRH) and pro-opiomelanocortin (POMC).

57. (Withdrawn) The method of claim 56, wherein the antigen is neuropeptide Y.

58. (Withdrawn) The method of claim 56, wherein the antigen is galanin.

59-61 (Canceled)

62. (Withdrawn) The method of claim 54, wherein the step of administering a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, further comprises administering an antibody, or an antibody portion elicited in a mammal for administration to the subject.

63. (Withdrawn) The method of claim 54, wherein the isolated antibody, or antibody portion is administered directly to the central nervous system.

64. (Withdrawn) The method of claim 54, wherein the isolated antibody, or an antibody portion is selected from the group consisting of a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a chimeric antibody, a humanized antibody, an Fab fragment, an F(ab')2 fragment and a single chain Fv fragment.

65. (Withdrawn) The method of claim 64, wherein the antibody is selected from the group consisting of anti-NPY antibody, anti-galanin antibody, anti-CART antibody, anti-orexin antibody, anti-TRH antibody, anti-leptan antibody, anti-CRH antibody, and anti-POMC antibody.

66. (Withdrawn) The method of claim 65, wherein the antibody is an anti-NPY antibody.

67. (Withdrawn) The method of claim 65, wherein the antibody is an anti-galanin antibody.

68. (Currently Amended) The method of claim 54, wherein the target ~~protein~~ receptor is a neuroreceptor. ~~is selected from the groupconsisting of neurotransmitters, a neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules.~~

69. (Withdrawn) The method of claim 68, wherein the target protein is selected from the group consisting of NPY neuropeptide and galanin.

70-76 (Cancelled)

77. (Withdrawn) The pharmaceutical composition of claim 70, wherein the isolated antibody, or an antibody portion, are elicited in a mammal for administration to a subject.

78. (Withdrawn) The pharmaceutical composition of claim 70, wherein the isolated antibody, or antigen binding portion is administered directly to the central nervous system.

79. (Withdrawn) The method of claim 70, wherein the isolated antibody, or an antibody portion is selected from the group consisting of a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a chimeric antibody, a humanized antibody, an Fab fragment, an F(ab')2 fragment and a single chain Fv fragment.

80. (Withdrawn) The method of claim 79, wherein the isolated antibody, or an antibody portion is an anti-NMDA antibody.

81. (Withdrawn) The method of claim 80, wherein the isolated antibody, or an antibody portion is an anti-NMDAR1 antibody.

82. (Withdrawn) A genetic vaccine comprising an antigen and a pharmaceutical acceptable carrier.

83. (Withdrawn) The genetic vaccine of claim 82, wherein the antigen is selected from the group consisting of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors and transcription factors.

84. (Withdrawn) The genetic vaccine of claim 83, wherein the antigen is an NMDA receptor.

85. (Withdrawn) The genetic vaccine of claim 84, wherein the antigen is NMDAR1.

86. (Currently Amended) A method for modifying the function of an N-methyl-D-aspartate (NMDA) target receptor associated with a neurological disorder in a subject comprising:

administering a vaccine comprising ~~inducing the presence of~~ a therapeutically effective amount of an NMDA antigen in the circulatory system of the subject, wherein the antigen elicits the production of NMDA antibodies that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject and bind to an NMDA target receptor located on a neuronal cell in the central nervous system of the subject and associated with a neurological disorder, and modify the function of the NMDA target receptor.

87. (Previously Presented) The method of claim 86, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

88. (Previously Presented) The method of claim 86, wherein the neurological disorder is selected from the group consisting of epilepsy, stroke, Alzheimer's disease, Parkinson's disease, dementia, Huntington's disease, amyloid lateral sclerosis and depression.

89. (Previously Presented) The method of claim 86, wherein the neurological disorder is epilepsy.

90. (Previously Presented) The method of claim 86, wherein the NMDA antigen is N-methyl-D-aspartate receptor subunit 1 (NMDAR1).

91-94 (Canceled)

95. (Currently Amended) A method for modifying the function of a N-methyl-D-aspartate (NMDA) target receptor associated with a neurological disorder in the central nervous system of a subject comprising:

administering a vaccine comprising ~~inducing the presence of~~ a therapeutically effective amount of an NMDA antigen in the circulatory system of the subject, wherein the antigen elicits the production ofNMDA antibodies in the circulatory system of the subject that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject

and bind to the target NMDA receptor located on a neuronal cell in the central nervous system and associated with a neurological disorder, and directly modify the function of the target NMDA receptor, or indirectly modify the function of a process involving the NMDA receptor.

96. (Previously Presented) The method of claim 95, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

97. (Previously Presented) The method of claim 95, wherein the NMDA antigen is N-methyl-D-aspartate receptor subunit 1 (NMDARI).

98-101 (Canceled)

102. (Currently Amended) A method for modifying the function of a N-methyl-D-aspartate (NMDA) target receptor associated with cognition in the central nervous system of a subject comprising:

administering a vaccine comprising ~~inducing the presence of~~ a therapeutically effective amount of an NMDA antigen in the circulatory system of the subject, wherein the antigen elicits the production of NMDA antibodies that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject and bind to the target NMDA receptor associated with cognition, and modify the function of the target NMDA receptor such that the modification of the NMDA receptor improves cognition in the subject.

103. (Previously Presented) The method of claim 102, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

104. (Previously Presented) The method of claim 102, wherein the NMDA antigen is N-methyl-D-aspartate receptor subunit 1 (NMDAR1).

105-108 (Canceled)

109. (Previously Presented) A method for modifying the function of a target receptor associated with a neurological disorder in a subject comprising:

administering a vaccine comprising a therapeutically effective amount of an N-methyl-D aspartate receptor subunit 1 (NMDAR1) antigen into the circulatory system of the subject, wherein the antigen elicits the production of antibodies that, upon compromise of the blood-brain barrier, will pass into the central nervous system of the subject and bind to a target receptor located on a neuronal cell in the central nervous system of the subject and associated with a neurological disorder, and modify the function of the target receptor.